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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------------|------------------------|
| 10/554,318 | 09/19/2006 | Conrad Roessel | 095309.56955US | 4559 |
| 23911 7590 01/02/2008 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300 | | | EXAMINER CUEVAS, PEDRO J | |
| | | | ART UNIT 2834 | PAPER NUMBER |
| | | | MAIL DATE 01/02/2008 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/554,318

Applicant(s)

ROESSEL, CONRAD

Examiner

Pedro J. Cuevas

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/24/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 6-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term “predominantly” in claim 6 is a relative term which renders the claim indefinite. The term “predominantly” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 6 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent No. 6,367,570 B1 to Long, III et al.

Long, III et al. clearly teaches the construction of a hybrid electric vehicle with electric motor providing strategic power assist to load balance internal combustion engine, comprising:

an internal combustion engine (150), an electric motor (200), a battery (400) electrically coupled to the electric motor and a sensor (462) for recording a state of charge of the battery;

wherein i) the motor can be switched between operation in a motor mode and operation in a generator mode, and ii) the motor can be mechanically coupled to the internal combustion engine and/or to an output drive of the system for the purpose of driving said system or for the purpose of said internal combustion engine or said output drive of the system driving the motor in the generator mode; and

a method of operating said motor, wherein:

when the internal combustion engine is operating and is coupled to the output drive, the electric motor operates, predominantly in the generator mode only when the load on the internal combustion engine is in a first, relatively lower, range; and predominantly in the motor mode when the load on the internal combustion engine is in a second relatively higher, range.

It has been held that the recitation that an element is “capable of” performing a function (“can be switched”, “can be mechanically coupled”) is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

6. With regards to claim 10, Long, III et al. disclose when the electric motor is being continuously positively coupled to the output drive, the electric motor always operates in either the motor mode or the generator mode.

7. With regards to claims 11 and 12, Long, III et al. disclose the system being a hybrid drive system / hybrid propulsion system in a motor vehicle.

It must be noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,367,570 B1 to Long, III et al. in view of U.S. Patent No. 5,343,970 to Severinsky.

Long, III et al. disclose the construction of a hybrid electric vehicle with electric motor providing strategic power assist to load balance internal combustion engine as disclosed above.

However, it fails to disclose:

changes in fuel consumption of the internal combustion engine which occur in response to load changes are recorded as a function of rotational speed of the internal combustion engine, and are stored; and

the electric motor is operated as a generator when the quotient of a load change and fuel consumption change exceeds a first threshold value; and is operated as a motor

when the quotient of a load change and fuel consumption is less than the first threshold value or a second threshold value.

Severinsky disclose the construction of a hybrid electric vehicle, wherein as shown in Figure 2:

changes in fuel consumption of the internal combustion engine which occur in response to load changes are recorded as a function of rotational speed of the internal combustion engine, and are stored; and

the electric motor is operated as a generator when the quotient of a load change and fuel consumption change exceeds a first threshold value; and is operated as a motor when the quotient of a load change and fuel consumption is less than the first threshold value or a second threshold value;

for the purpose of realizing substantially increased fuel economy and reduced pollutant emissions as compared to present day vehicles while suffering no significant penalty in performance, operating convenience, cost, complexity, or cost.

It would have been obvious to one skilled in the art at the time the invention was made to use the operational characteristics of a hybrid electric vehicle disclosed by Severinsky on the hybrid electric vehicle with electric motor providing strategic power assist to load balance internal combustion engine disclosed by Long, III et al. for the purpose of realizing substantially increased fuel economy and reduced pollutant emissions as compared to present day vehicles while suffering no significant penalty in performance, operating convenience, cost, complexity, or cost.

It would have also been obvious to one having ordinary skill in the art at the time the invention was made to select the quotient of a load change as a first and second threshold values to operate the electric motor as a generator or as a motor, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Also, if the “acts” of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. *Schrader*, 22F.3d at 294-95, 30USPQ2d at 1458-59. Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process. MPEP 2106.

10. With regards to claim 8, Severinsky disclose the electric motor being operated with increasing generator power when the quotient of the load change and the consumption change of the internal combustion engine increases.

11. With regards to claim 9, Severinsky disclose the electric motor being operated with increasing motor power when the quotient of the load change and consumption change of the internal combustion engine falls.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (571) 272-2021. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Pedro J. Cuevas
December 25, 2007